Early Detection and Monitoring

Celestine Duncan, consultant

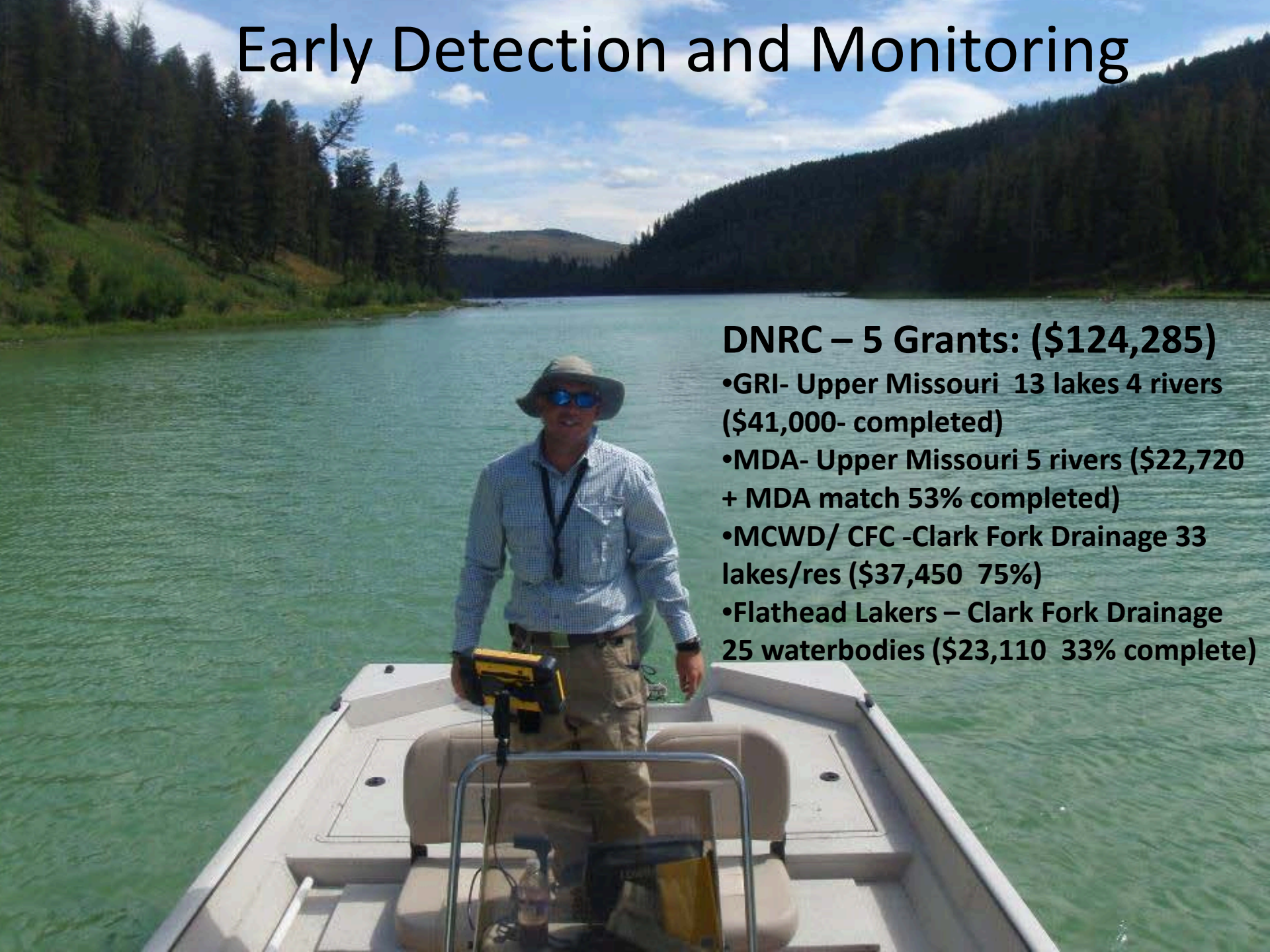
Discuss

- Role (state AIS effort)
- Aquatic plant survey methods, what's working what's not
  - Identify research needs- survey/monitoring
- Identify gaps within existing programs (needs for 2012)
- Partner opportunities

Role- AIS program

- Compiled statewide aquatic plant management plan
- Technical Support to DNRC (as-needed contract $23,000)- based on requests through DNRC
  - Review DNRC AIS grants and support grantees; provide reports; legislative support; BMP's, etc)
  - Respond to emerging aquatic invasive species issues on an as-needed basis.
  - Support Headwaters Eurasian Watermilfoil Task Force (email updates; respond to technical questions; one meeting with Task Force)

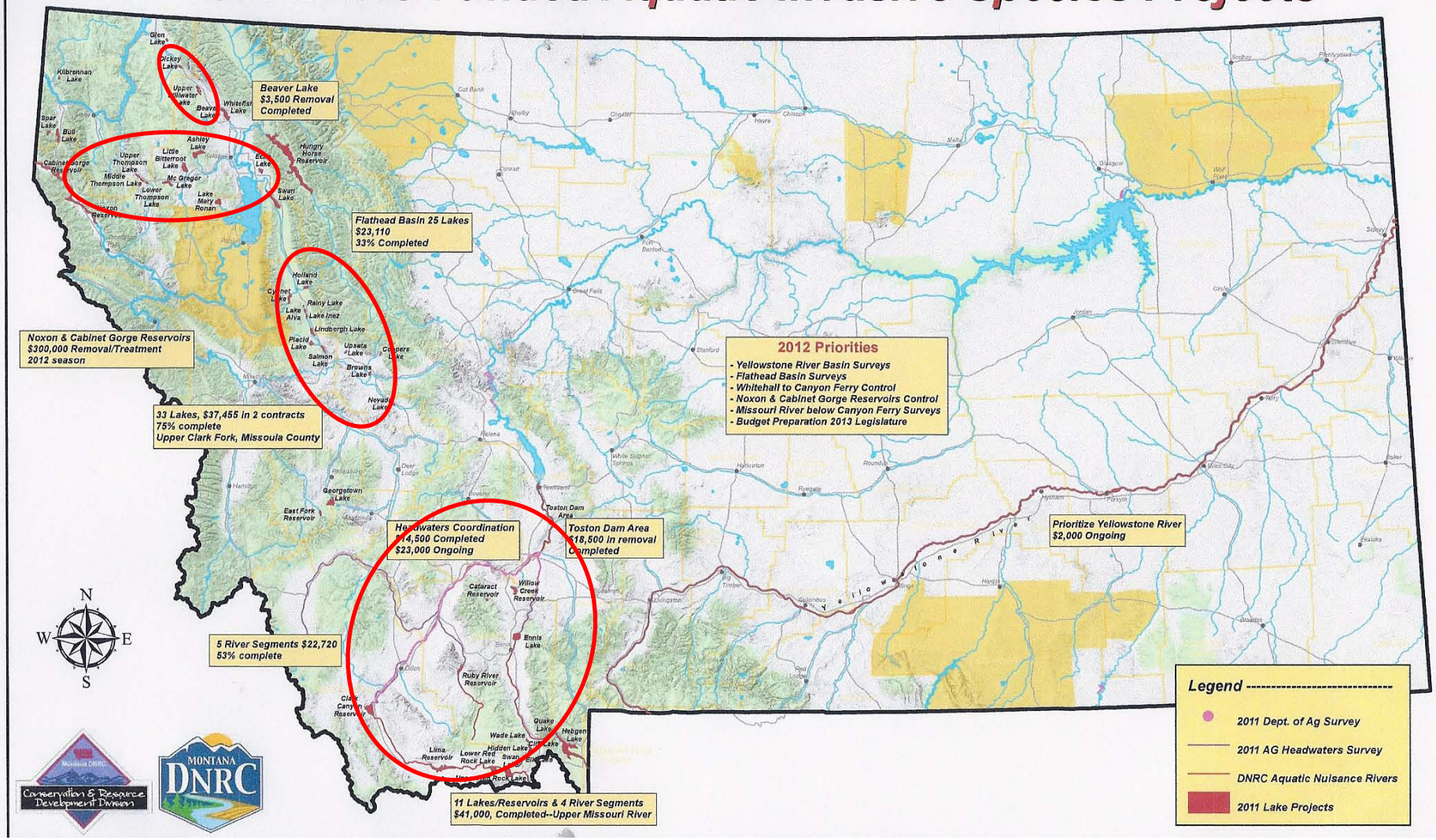
Early Detection and Monitoring



DNRC – 5 Grants: ($124,285)

- **GRI- Upper Missouri 13 lakes 4 rivers ($41,000- completed)**
- **MDA- Upper Missouri 5 rivers ($22,720 + MDA match 53% completed)**
- **MCWD/ CFC -Clark Fork Drainage 33 lakes/res ($37,450 75%)**
- **Flathead Lakers – Clark Fork Drainage 25 waterbodies ($23,110 33% complete)**

2011 DNRC Funded Aquatic Invasive Species Projects



Survey Methods

What's best for early detection survey?

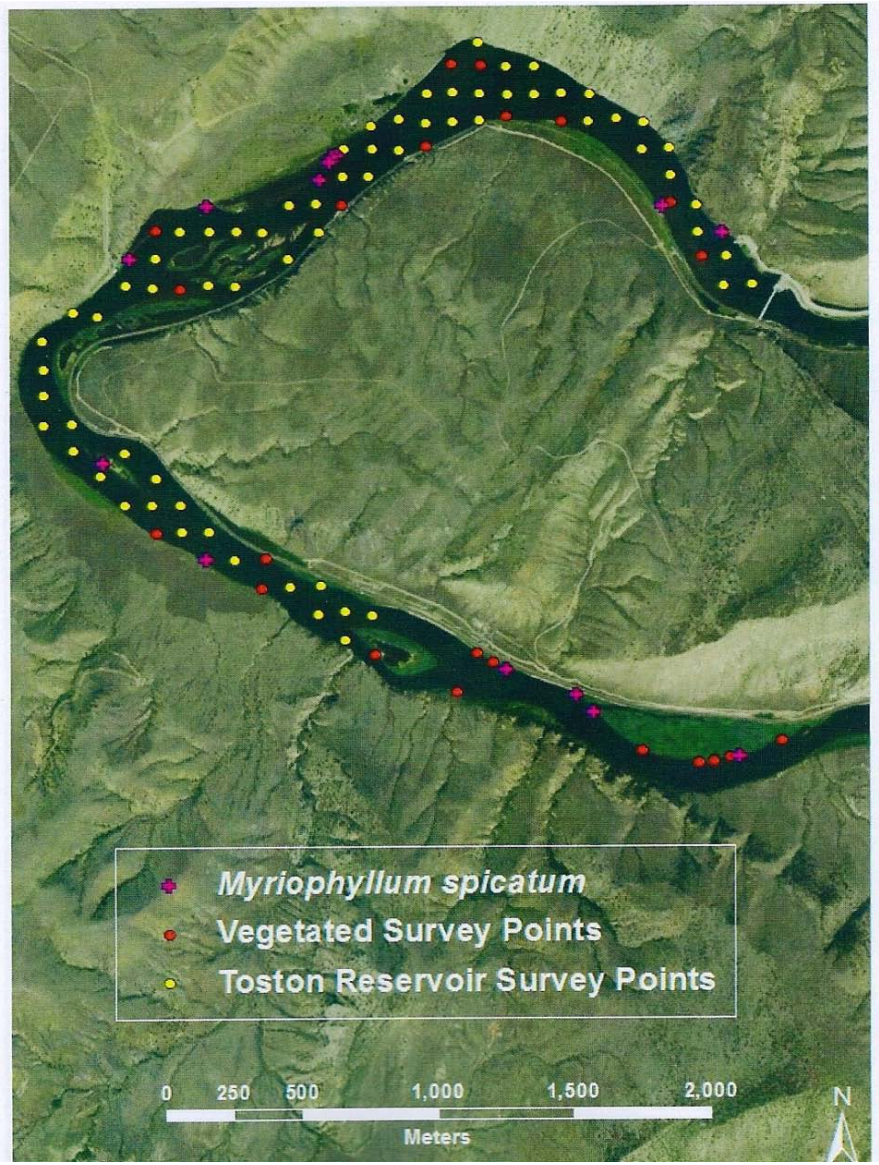
A sunny calm day with clear water

Clear/calm…..Unpredictable

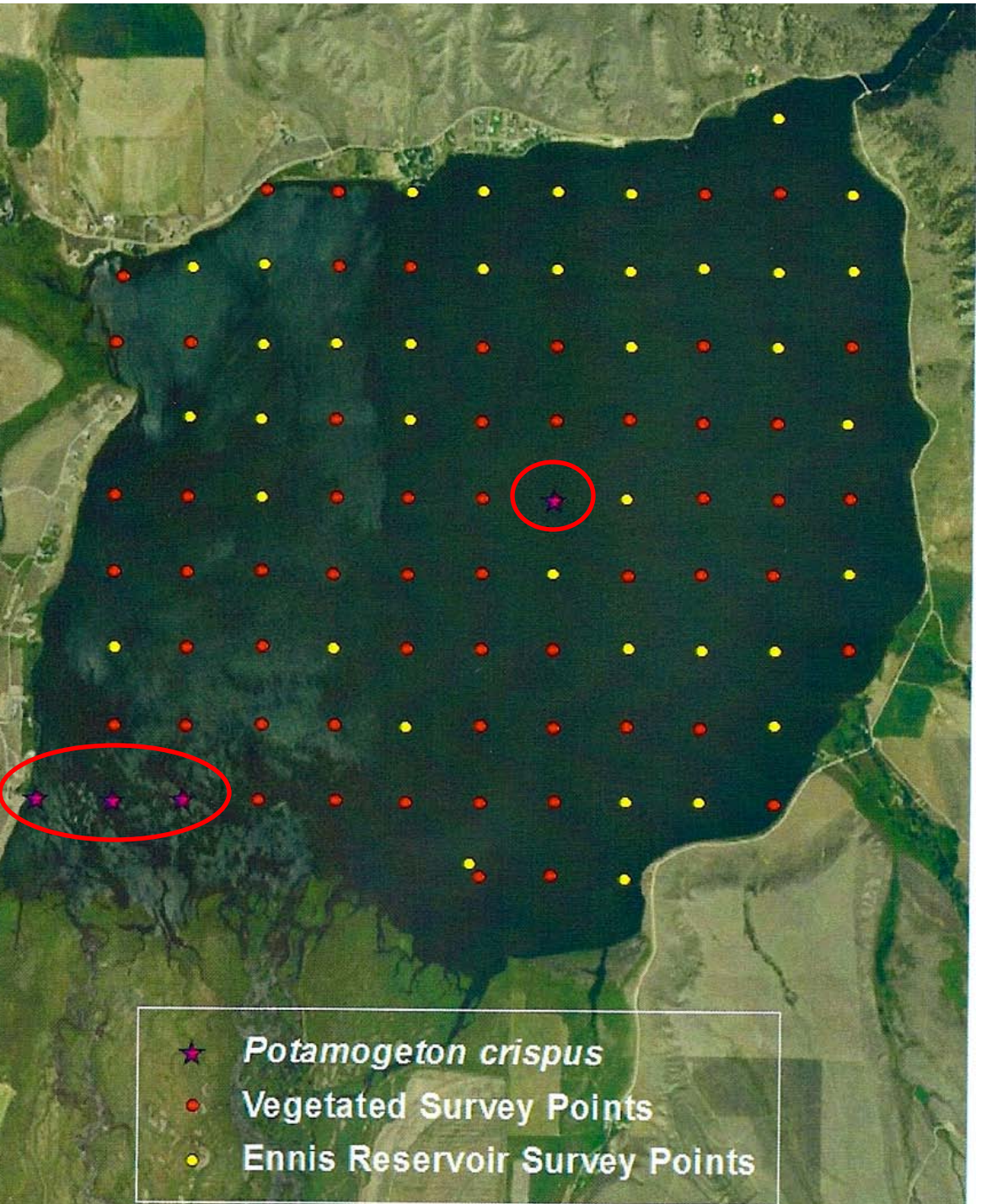
- Put people in the water (high use areas)
- Littoral Point intercept
- Point-location monitoring

  Described in Plan

Littoral zone (1 ft to 30-50 ft) point intercept survey



- Systematic or random-systematic survey method (repeatable; > chance of finding small infestations)
- Pre-determined grid of points established
- Grid spacing dependent upon total size of reservoir
- Data collected
  - Plant presence/absence
  - Depth
  - Water transparency (sechhi disk; at set time)
  - Frequency of occurrence and species richness



Ennis Reservoir-
Aquatic Plant Survey

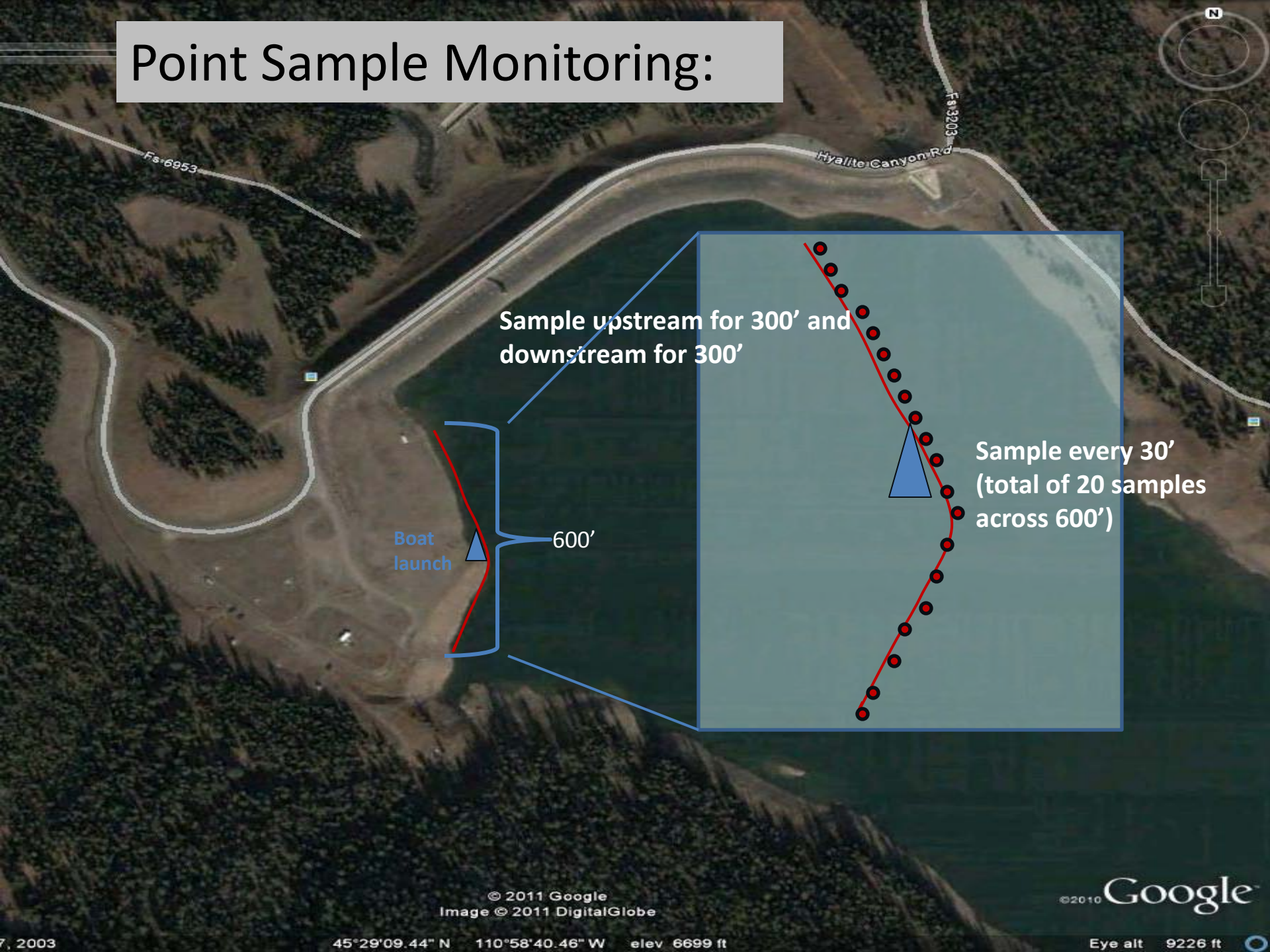
100 points surveyed

Aquatic Vegetation:

Elodea ……..38%
Coontail ……..21%
Leafy pondweed ……..19%
Arumleaf arrowhead….10%
Curlyleaf pondweed…… 4%

High priority for future surveys and AIS monitoring

Point Sample Monitoring:



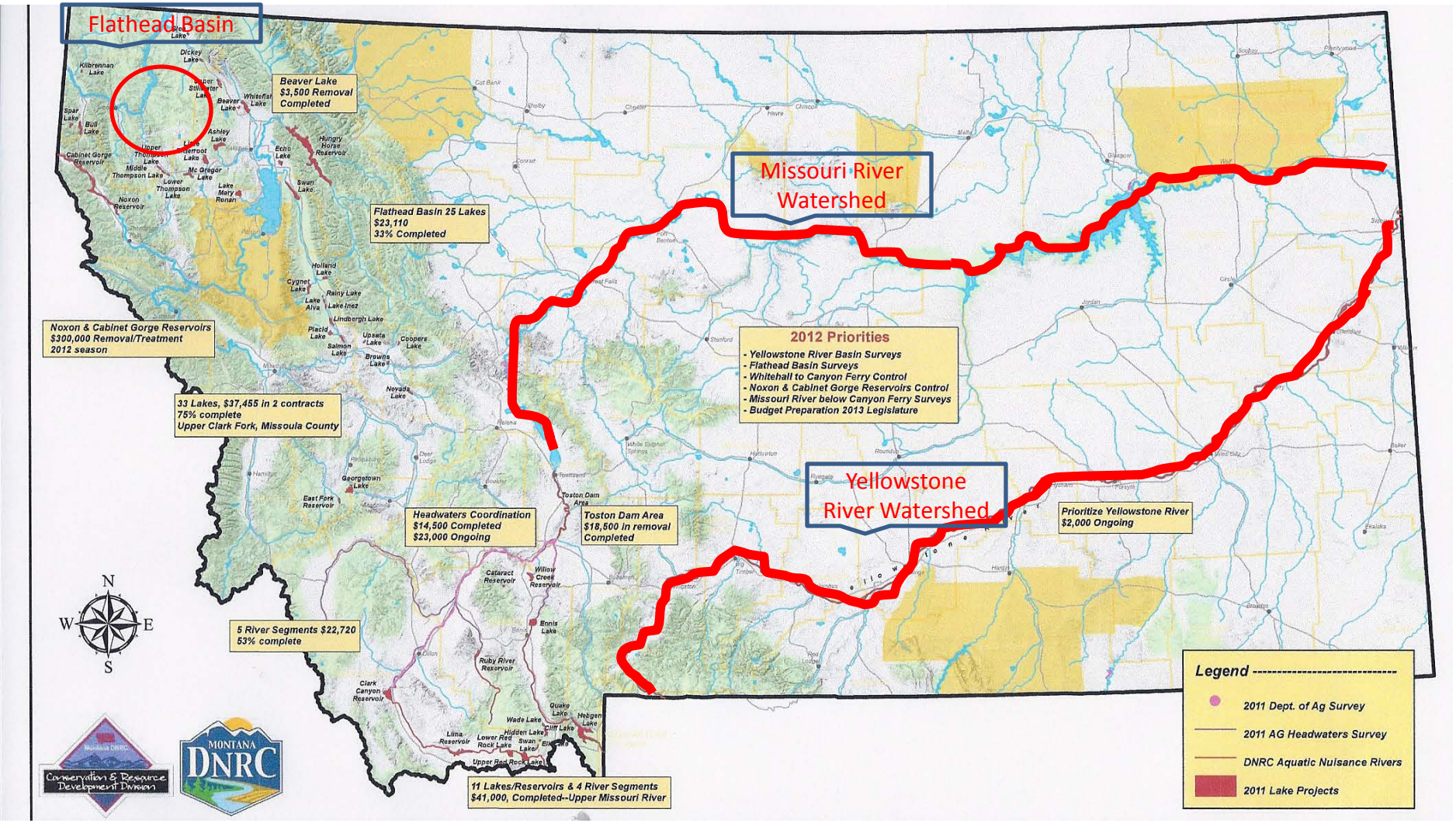

Rivers: Sample in zig-zag pattern for 300 feet upstream and 300’ downstream from initial access point
300’
300’
Access point
Clarkston Rd
Image USDA Farm Service Agency
© 2011 Google
Google
Imagery Date: Jun 23, 2009
45°59'35.08" N 111°26'17.65" W elev 4006 ft
Eye alt 8588 ft

River Survey's

Research Needs: Aquatic Plant Survey/Early Detection

- Current survey methodology adequate – [follow protocols so survey's are consistent across state and repeatable]
- Can we improve prediction for probability of occurrence of aquatic invasive plants (boater movement patterns, habitat suitability, etc)?
- [Basic research] Early detection of aquatic invasive species (plants) measuring environmental (free) DNA in water column (Dr. Andrew Ray, USGS)

Data Gaps – Needs for 2012



Program Needs?

- Aquatic Noxious Weeds – County Weed Districts and MDA
- More people trained/engaged in aquatic plant survey
  - **75% of initial detections of EWM (Beaver Lake, Toston, and Ft Peck) were result of individuals outside of funded projects**
- Partnership- lots of folks want to help!!!!
  - BLM (Kenny Keever)- Missouri River below Ft. Benton
  - TNC (Nathan Korb; Brad Bauer) – Red Rock River/Big Hole River
  - USFWS (Lower Red Rock Lakes; *Lima and Upper RR Lakes*)
  - FBC, CSKT, SKC, WLI, UM: Flathead Lake/ basin surveys
  - USACE (Patricia Gilbert): Noxon and CG/ Ft. Peck
  - Universities/colleges (CES): state plan/training
  - Other federal agencies (USFS, BOR, USGS,Tribes, etc)
  - Conservation Districts
  - Watershed groups
  - Outfitter/guides
  - Lake shore homeowner associations
  - Land Trust Organizations/other non-profits
  - Citizen scientists/ volunteers (recreationists)

Develop Partnerships and Expand Aquatic Plant Survey's at the Local Level